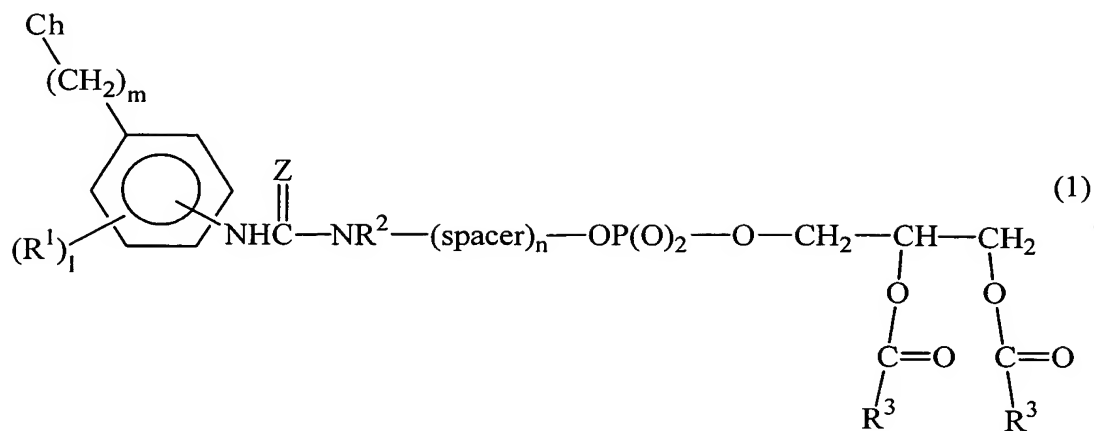


Claims

1. A compound of the formula:



wherein Ch represents a chelating moiety;

m is 0-3;

R¹ is a non-interfering substituent;

l is 0-2;

Z is S or O;

R² is H or alkyl (1-4C);

n is 0 or 1; and

each R³ is independently an optionally substituted saturated or unsaturated hydrocarbyl group containing at least 10C.

2. The compound of claim 1, wherein n is 1.
3. The compound of claim 2, wherein the spacer is CH₂CH₂ and R² is H.
4. The compound of claim 1, wherein Z is S.
5. The compound of claim 1, wherein R² is H.
6. The compound of claim 1, wherein l is 0 and m is 1 or 0.

7. The compound of claim 1, wherein each R^3COO is a residue of a naturally occurring fatty acid or a mixture of said residues.
8. The compound of claim 1, wherein R^1 is CH_3O .
9. The compound of claim 2, wherein the spacer comprises a peptide or a polyalkylene glycol.
10. The compound of claim 1, which further comprises, associated with Ch, a paramagnetic metal ion or a radionuclide metal.
11. A composition which comprises the compound of claim 1 associated with lipophilic nanoparticles or microparticles.
12. A composition which comprises the compound of claim 10 associated with lipophilic nanoparticles or microparticles.
13. The composition of claim 11, wherein said particles contain at least 2,000 copies of the compound of claim 1.
14. The composition of claim 12, wherein said particles contain at least 2,000 copies of the compound of claim 10.
15. The composition of claim 11, wherein the nanoparticles or microparticles further contain a targeting agent.
16. The composition of claim 12, wherein the nanoparticles or microparticles further contain a targeting agent.
17. The composition of claim 15, wherein said targeting agent is a receptor ligand or an antibody or fragment thereof.
18. The composition of claim 16, wherein said targeting agent is a receptor ligand or an antibody or fragment thereof.

19. The composition of claim 11, wherein said microparticles or nanoparticles further comprise a biologically active agent.

20. The composition of claim 12, wherein said microparticles or nanoparticles further comprise a biologically active agent.

21. The composition of claim 11, wherein said microparticles or nanoparticles are liposomes, oil droplets, perfluorocarbon nanoparticles, lipid-coated protein particles, or lipid-coated polysaccharides.

22. The composition of claim 12, wherein said microparticles or nanoparticles are liposomes, oil droplets, perfluorocarbon nanoparticles, lipid-coated protein particles, or lipid-coated polysaccharides.

23. A method to obtain a magnetic resonance image or an image produced by a radionuclide which method comprises imaging a tissue which is associated with the composition of claim 12.